

# XCHANGER XPRESS

The official company newsletter of Precision Equipments



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## Rod Baffle Heat Exchanger



ROD Baffle Heat Exchangers are Shell and Tube type Heat Exchangers utilizing rod baffles to support the tubes and secure them against vibrations. ROD Baffle Heat Exchanger design provides superior pressure drop performance on Shell side and operates without tube vibration failures. The term "baffle" refers to an annular ring in which the ends of a support rods are connected, hence the term "Rod Baffle".

In certain applications, such as gaseous service, it is critical to minimize shell-side pressure losses. The best solution for such application will be a Rod Baffle Heat Exchanger. Rod Baffle Exchanger can reduce Pressure drop to a significant extend when compare to a traditional Plate Baffle Exchanger.

Even with minimum contact between the rods & tubes (Four point tube containment as shown in Figure-1) the tube vibration are eliminated. With the more stringent pressure loss criteria, higher heat-transfer rates could be achieved with the ROD baffle design.

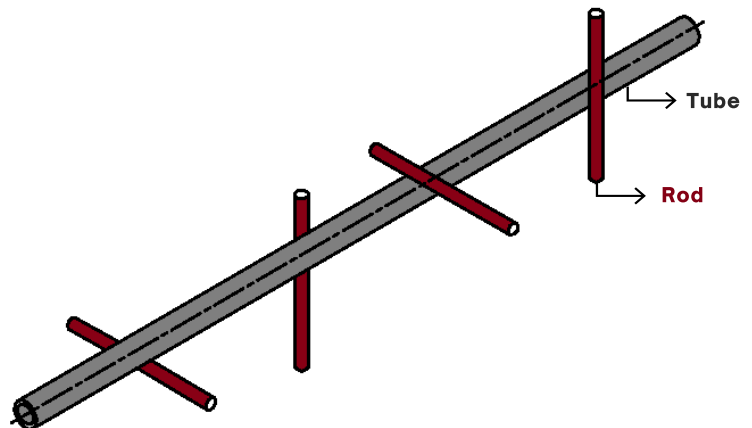
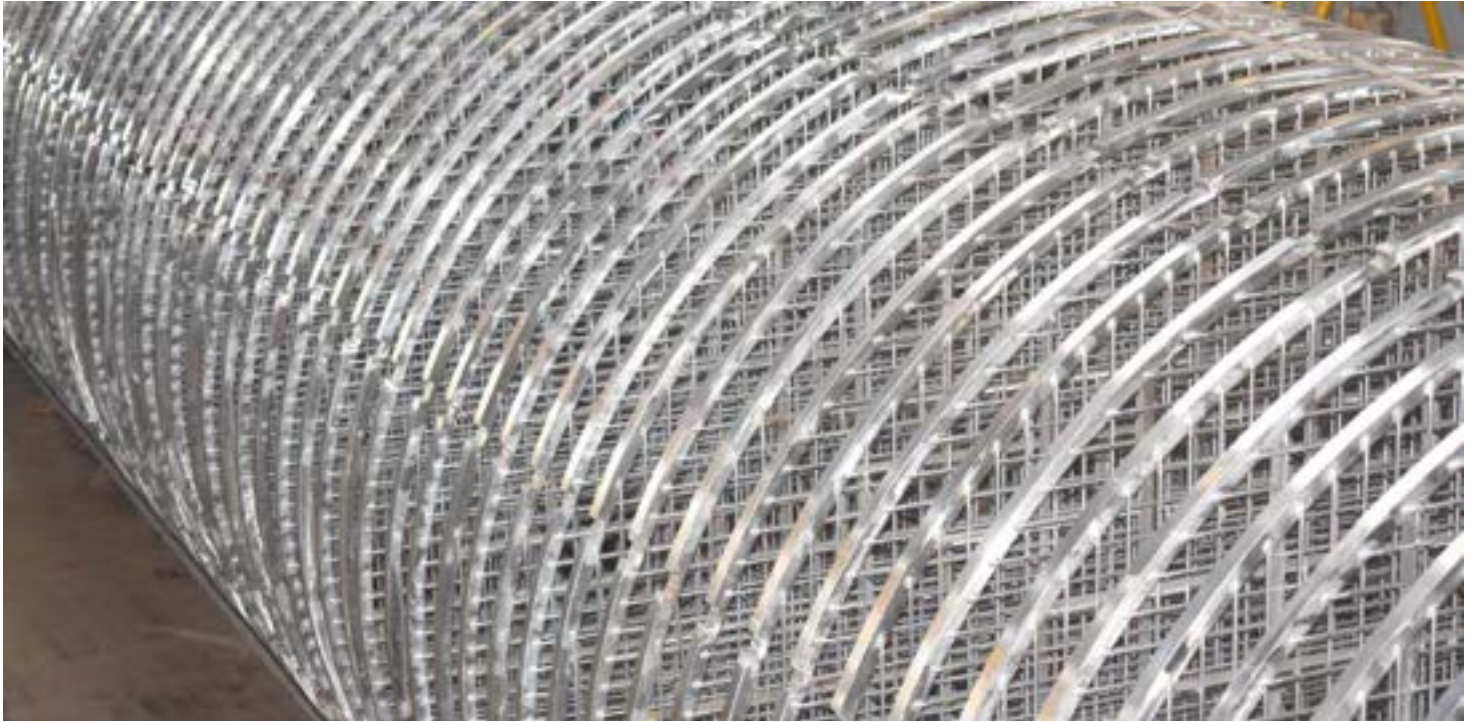


Figure-1



A ROD Baffle tube bundle is surrounded by Shell and the Tubes in the tube bundle are supported by rod baffle assemblies. One set of baffle contains 4 baffle rings out of which 2 rings will be with horizontal rod configuration and 2 rings will be with vertical rod configuration placed alternatively. Total set of baffles required will be based on Tube Length. Number of rods in baffle ring is based on tube count and pitch. Care has to be taken for welding of rods to baffle ring & the overall bundle assembly as mismatch in dimension will not allow tube insertion.



Figure-2

<b>Project</b>	Mono Ethylene Glycol
<b>Size</b>	Dia 2.35 m X 16.6 m Long
<b>MOC</b>	SS 304
<b>Weight</b>	140 MT
<b>Tube QTY</b>	8233 Nos
<b>Tube Size</b>	15.875 mm OD X 1.65 mm Thk X 13500 mm Lg

Since this type of Exchanger is used in Gas – Gas applications, Tube bundle at Inlet/Outlet is prone to vibrations and to avoid such vibrations, Vapor belts at inlet and outlet of Shell side Nozzles are provided as shown in Figure-2.

Rod baffle Exchangers can be used in Fixed Tube-sheet Configuration and U-Tube configuration. **Precision Equipments** has a specialized experience in Design and Fabrication of Rod Baffle Heat exchangers with Fixed Tube-Sheet as well as U-Tube configurations.

**Hope you enjoyed the news letter and please stay safe !!**

